



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/568,066

02/13/2006

Wataru Iijima

286003US0PCT

7464

22850

7590

10/08/2009

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.

1940 DUKE STREET

ALEXANDRIA, VA 22314

EXAMINER

HINES, LATOSHA D

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

10/08/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com

oblonpat@oblon.com

jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/568,066	<b>Applicant(s)</b> IIJIMA ET AL.	
	<b>Examiner</b> LATOSHA HINES	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on May 15, 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1-12 are pending and have been fully considered. Claims 7-12 are new.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6, 9, and 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The relative term "mainly composed of" used in claim 6 does not have a well-recognized meaning and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claims unclear. Applicant should replace the term with "comprising..." or "consisting essentially of...", and so forth. No new matter may be added.

Claims 9 and 11-12 contain the trademark/trade name Hastelloy as in Hastelloy reaction tube. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982), and MPEP 2173.05(u). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a

Art Unit: 1797

trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a reaction tube and, accordingly, the identification/description is indefinite.

Examiner has taken the position that one or both are present in composition.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over TSUTO et al. (US 2001/0053860).

TSUTO et al. discloses a process for preparing or producing a fatty acid alkyl ester which can be effectively used as a fuel oil for **diesel** engines, through a **trans-esterification** of triglyceride contained in a variety of **fats and oils** including plant oils such as rape oil, sesame oil, and animal oils with alcohol (column 1-2). The reaction between the **fat** and oil and the alcohol is performed in an atmosphere in which the alcohol is in super-critical state in the absence of metal alkali and acid **catalysts** (column 2 lines 40-60). The **trans-esterification** with **methanol** is performed in a **tube** reactor (meets the limitations of claim 5)

Art Unit: 1797

through which the fat and oil and the alcohol are passed continuously to react with each other.

It has been known that a fatty acid alkyl-ester could be obtained by subjecting major ingredients of fats and oils such as monoglyceride, diglyceride and triglyceride, to a trans-esterification with an alkyl alcohol (column 1 lines 29-40), meeting the limitation of claim 6. TSTUO et al. gives various examples of the fats and oils being used in the composition including methyl esters (column 5-6). To cause the fats and oils and the alcohol to react with each other, the conditions of high temperatures and high pressures must be met to suppress the thermal decomposition of **glycerin** or the like (column 4 lines 6-37). As stated by applicant acceptable conditions for meeting the claimed language relevant to glycerin where "glycerin is not generated" is for example, cases where "the generated glycerin is not separated from the bio-diesel fuel" include but are not limited to glycerin generated is so small that the glycerin is not separated from the bio-diesel fuel, which can be found in applicant's specification on page 6.

In particular, the reaction temperature is usually within the range of **250 to 300°C** and the pressure range is generally within **5 to 13 MPa**. In, particular under a condition of higher than **250°C**, it is essential to control the reaction time **within 30 minutes**, preferably 5 minutes (column 4 lines 26-37). TSUTO et al. does disclose the claimed invention except for the specific temperatures and pressures stated by applicant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use higher

Art Unit: 1797

temperatures and pressures because the higher the temperature of the reaction the amount of pressure required would automatically be higher to mirror the high temperature amount. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

The suitable molar ratio of the alcohol to triglyceride in this process is **1.2 to 50 times**, more preferably 1.2 to 30 times, as much as the amount stoichiometrically required for trans-esterification of the triglyceride (column 4 lines 55-65).

#### ***Allowable Subject Matter***

6. Claims 1-5, 7, 8 and 10 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach a process for producing bio-diesel fuel wherein a methanolysis reaction occurs without a catalyst and glycerin is not generated under reaction conditions comprising of a reaction temperature of 370°C to 500°C and a reaction pressure of 20 MPa to 60 MPa.
8. Claims 9 and 11-12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

#### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LATOSHA HINES whose telephone number is 571-270-

Art Unit: 1797

5551. The examiner can normally be reached on Monday thru Thursday from 8 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Marcheschi can be reached on 571-272-1374. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LATOSHA HINES/  
Examiner, Art Unit 1797

/Ellen M McAvoy/  
Primary Examiner, Art Unit 1797